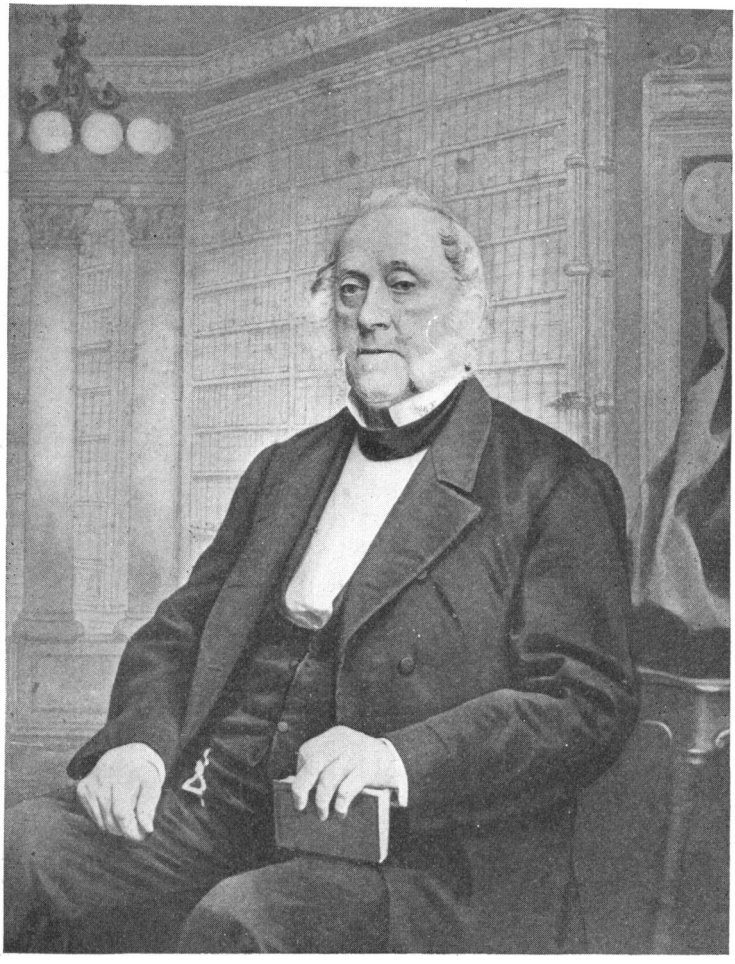

VALENTINE MOTT

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Prior to the introduction of anæsthesia (1847), modern English and American surgery was mainly occupied with ligations of arteries and excisions of bones and joints. On the Continent, other things were done, particularly in subcutaneous and plastic surgery; but in our own country, the story of these earlier days is centered in the bold performance of difficult, dangerous operations by rugged pioneers, whose powerful arms were as much employed in holding down the writhing, screaming patient as in plying the needle and the scalpel. Our history begins in 1796, when Dr. Wright Post, of New York, for the first time in our country, ligated the femoral artery for aneurism by the Hunterian method, to be followed by his equally successful ligations of the primitive carotid (1813, 1816), the external iliac (1814) and the subclavian (1817). In 1781, Dr. John Warren, of Boston, amputated at the shoulder joint. A few years later, in the backwoods of Kentucky, Dr. Ephraim McDowell performed his first ovariotomy (1809) and Dr. Charles McCreary first excised the clavicle with success (1813). What followed thereafter is a long and complex history of brilliant operating, culminating in the foundation of operative gynecology by a country doctor in South Carolina, Marion Sims. Of this group of pioneer surgeons, the most remarkable was unquestionably Dr. Valentine Mott, whose skill in operating was derived from two great teachers, Wright Post and Astley Cooper. Mott performed no less than 138 ligations of the great vessels for aneurism, 165 lithotomies and over 1,000 amputations. What is more to the purpose, his

patients usually recovered and lived. In 1818, to save the life of a sailor then under operation for subclavian aneurism, Mott ligated the innominate artery, two inches from the heart, with survival of his patient for 28 days. Thereafter, he tied the femoral 57 times, the primitive carotid 51 times, the popliteal 10 times, the subclavian 8 times, the external iliac 6 times, the carotid and internal iliac twice each, and the common iliac once. On June 17, 1828, he excised the clavicle for osteosarcoma with tough adhesions, a bloody four-hour operation, requiring 40 ligations of arteries, yet with complete recovery of his patient. In 1821 he performed the first operation for osteosarcoma of the lower jaw, was the first to excise it for necrosis, and in 1832, introduced his operation for immobilizing it. He successfully amputated at the hip-joint in 1824 and removed a large fibroid tumor from the nasopharynx in 1841. This is a brilliant record indeed, particularly in getting surgical patients well, without anæsthesia or antisepsis. It placed Mott on a level with the greatest European surgeons of his time, who received him with a respect and consideration rarely accorded Americans in those days. Mott's teacher, Sir Astley Cooper, said: "He has performed more of the great operations than any man living, or that ever did live."

Valentine Mott, son of Dr. Henry Mott, a physician of English descent, was born at Glen Cove, near Oyster Bay, Long Island, on August 20, 1785. He got his schooling by private tuition at Newton, Long Island, and was a good Greek and Latin scholar all his life. In 1804, he began to study medicine under Dr. Valentine Seaman, of New York, and in 1807 took his M.D. at Columbia College with a graduating dissertation on the therapeutic properties of the marsh rosemary (*Statice limonium*). After the usual years of study at London and Edinburgh, where he came under Astley Cooper, Monro, Home, Hope and Dugald Stewart, he became, at the age of 26, professor of surgery in Columbia College (1811), occupying the chair until 1826, when the whole faculty resigned to form the Rutgers Medical College, of New Jersey. In 1831, when the Rutgers College closed, Mott was appointed professor of operative surgery in the College of

Physicians and Surgeons. The hazards of the kind of bold surgery he was then doing broke down his health in 1834 and he spent the next six years in travel through Europe and Asia. He was a good traveler, putting up with hardship with cheerfulness and equanimity, and probably saw more of real conditions in Greece, Asia Minor and Egypt than any other American of his time. After considerable exposure to bubonic plague in the near East, and having made fast friendships with all his surgical peers, he returned in 1841, to accept the chair of surgery in Medical College of the University of New York, which he held until 1850, when he went abroad again. Upon his return, he became professor of operative surgery in the College of Physicians and Surgeons, continuing later, as emeritus professor in this chair, until his death on April 26, 1865. Two of his sons, Valentine and Alexander Brown Mott, were physicians, of whom the former served as a surgeon in the Sicilian rebellion and died of yellow fever in California in 1854. The latter was one of the founders of Bellevue Medical College. Dr. Mott's widow converted his libray and museum of pathological specimens into a memorial at 64 Madison Avenue in 1866. The collection was transferred to the Academy of Medicine in 1909.

Dr. Mott was a fine figure of a man, with an open winning countenance in youth, an urbane, attractive gentleman whose later portraits resemble those of well-born Englishmen of the period. He was a good, careful teacher, popular with the students, whom he advised never to attempt a dangerous operation without first considering whether they would care to undergo it themselves. In his travels, he notes with aversion the tendency of continental surgeons toward showy operating with a callous disregard for the patient's recovery. He was not that kind of a man. We should not recount his surgical triumphs to-day, were it not for his wonderful record of recoveries due to constant solicitude for his patients. His wit in the surgical clinic was of the period. On one occasion, when he was consulting with the mother of a dirty, emaciated child, a half-bred student jumped the rail of the amphitheatre and began to examine the naked infant himself. Wheeling about suddenly, Mott said: "Are *you*

the father of this child?'' Amid the derision of his fellows, the blushing student made an ignominious retreat to the back benches.

Gross, in his eulogy of Mott, notes only one fault: ''As a lecturer, he is said to have occasionally been too egotistical.'' And thereby hangs a tale. The pioneer period before the Civil War was one in which the possibilities of developing the boundless resources of our country filled every mind, an uncritical, sanguine, spread-eagle period to which Arthur Hugh Clough reacted with the express conviction: ''Emerson is the only profound man in this country.'' Emerson himself said, in his lectures: ''The American eagle is well, but beware of the American peacock.'' In his letters to Carlyle, he says that the trouble with Americans of the period is ''not water on the brain, but a little gas there.'' Yankee Doodle, our then popular national air, affected the Austrian poet Lenau as ''a stiff bear dance,'' in other words, a good quickstep for troops hiking to war, but droll for state occasions. To Henry James, the sculptures and paintings in the rotunda of the Capitol were ''touching reminders of the early period of American art.'' Upon this queer period of wind-bag oratory, Mott fell with a single obsession: priority in surgical procedure. His was nowise an unfinished mind, but this subject affected him as with the anatomist Pieter Camper, who, in investigating the osteology of whales, began to see even pretty girls as modifed whales. Mott's case-reports are clear, precise, unaffected and simple, but his travels are full of ludicrous self-adulation about his operations, to which he constantly recurs. Yet he was timorous about writing a surgical text book. He was wise. His best work is recorded in his additions to his huge translation of Velpeau's Surgery (1847), which is now our great source-book for the history of surgical operations.

We read that Mott's Travels in Europe (1842) exposed him to ''severe and ungenerous criticism from the medical press.'' I have waded through this stodgy volume of 425 pages, and my reaction to it is that of Falstaff: an intolerable deal of verbiage to a half-pennyworth of facts. The positive facts I glean from the tedious perusal are that dolphins were sacrificed to Ceres at

Phalerus, that a true Greek girl never dances except with her own sex, that modern Greeks sing with a nasal twang, that medical students in Rome went about the clinics with jars of live coals to keep them warm, that Egyptians, like the Spaniards, keep their houses cool by shutting out the hot air and light, that fat men are rare in Egypt, that Mohammed Ali had women trained in midwifery for exclusive harem practice, and that a Turk made lime out of the marble pavement of the Theseion in 1769. Jesting apart, for a "big, strong, healthy man," Mott writes in this book in what Lady Dufferin called the Honorable Impulsia Gushington manner, the Laura Matilda vein affected by young ladies of the keepsake period, who half-memorized Burke's Peerage and Roger's "Italy." The volume is padded throughout with that gratuitous parade of classical lore which disfigured even the prose of Poe. The longest chapter, that on Greece, is stuffed with guide-book information, trite mythology and triter citations from Childe Harold. When Mott tells how the unscrupulous Dupuytren got hold of his paper on excision of the jaw and then tried to shoulder him out of his priority, he does it with the fussy italics of maiden ladies in Victorian novels. The sound and readable parts of the book are his fine and generous pictures of his great surgical colleagues abroad, his accounts of goitre, pellagra, the marsh-fevers of Greece and Italy, his reasons for interdicting the Italian climate for consumptives, his view that, in antiquity, leprosy and lues were probably identical, his generous speculations on the futility of quarantine in malarial fever and of disinfection against bubonic plague. His vision was keen enough, his literary style eminently genteel, but it takes him a page to tell us that Hell-Gate is a fiercer current than that between Scilla and Charybidis, the centric fact being buried in a cocoon of verbiage. He is humorous only about the smell of vagrant Greeks, the large-sized bed-bugs on the plains of Marathon and the obesity of women in Asia Minor. He damns the ambitious Venetians and Lord Elgin for despoiling the Parthenon in most elegant language and his references to nudity are invariably stilted. Of the Venus dé'Medici, he complains that "it is too diminutive, while Canova's Venus is better be-

cause there is more of it." Pauline Borghese (Napoleon's sister), who posed for the statue, would have smiled at this tribute. The Theseion at Athens is too small for him and only the Pyramids come up to his expectations. In Florence, however, he notices a misplaced inguinal artery in a wax preparation, and goes straight to the correct inference, *viz.*, that since the time when the great Quattrocento painters practised dissection, anatomical teaching at Florence seems to have been concentrated mainly on the muscles. The most interesting thing in Mott's book is his account of the petrified pathological preparations of the Florentine Sigato. This Signor Sigato, it seems, had acquired in the far East a secret process of petrifying animal substances, so that pathological preparations, thus hardened, could be sawed into slabs, susceptible of a high polish, preserving at the same time the most delicate details of structure and color, even to the bloodvessels. Mott describes a table-top, a mosaic of squares, showing perfect cross-sections of a phthisical lung, hydatids of the liver, renal calculus and cardiac lesions. The petrified solid specimens could be thrown about in the roughest way without damage. Mott tried to employ Sigato, who was heavily in debt, but the unfortunate Florentine died three weeks later and his wonderful secret died with him. If it could be rediscovered, what wonderful archives in polished stone would be conveyed to posterity by pathologists and cross-section anatomists!

F. H. Garrison

THE APPLICATION OF NEWER METHODS IN BLOOD-CHEMISTRY TO CLINICAL MEDICINE

Renee von E.-Wiener

(Delivered before the New York Academy of Medicine, May 21st, 1925.)

The blood together with the lymph provides a vehicle for the chemical correlation of the cells of the body. Any changed condition in the tissue fluids will be promptly reflected in its composition and conversely any change in the basic constituents of